

IN THE CLAIMS

Claims 1-10. (canceled).

Claim 11. (currently amended) A laser annealing apparatus used for fabrication of a thin film semiconductor device integratedly formed with a plurality of thin film transistors each of which includes as an active layer a semiconducting thin film which is formed on a surface of an insulating substrate ~~spread in longitudinal and lateral directions across the surface of the insulating substrate~~ and then crystallized, comprising:

means for intermittently irradiating a pulsed laser beam formed in a band-shape along the longitudinal direction of the insulating substrate to the insulating substrate, and simultaneously moving the laser beam relative to the insulating substrate in the lateral direction with a specific movement pitch while partially overlapping regions irradiated with the laser beam to each other, the overlapped portions of the irradiated regions having a band shape along the longitudinal direction, the pulsed laser beam irradiating the semiconducting thin film effecting the semiconducting thin film to ~~melt and then spread in a longitudinal and a lateral direction across the surface of the insulating substrate and then~~ crystallize;

means for setting the movement pitch of the laser beam at a value equal to an arrangement pitch of the thin film transistors or at a value larger by a factor of an integer than the arrangement pitch of the thin film transistors; and

means for previously positioning the insulating substrate such that any one of the boundaries of the overlapped portions of the irradiated regions is not overlapped on a channel region of each of the thin film transistors,

wherein the any one of the boundaries of the overlapped portions of the irradiated regions is not overlapped on the channel region in the longitudinal direction and the lateral direction.

Claim 12. (original) A laser annealing apparatus according to claim 11, wherein the laser beam is supplied from a laser light source.

Claim 13. (original) A laser annealing apparatus according to claim 11, wherein said positioning means comprises a detector for irradiating light onto the surface of an alignment mark formed on the insulating substrate and detecting an amount of the light reflected from the surface of said alignment mark.

Claim 14. (original) A laser annealing apparatus according to claim 13, wherein said light is supplied from said laser light source.

Claim 15. (original) A laser annealing apparatus according to claim 11, wherein said moving means comprises a stage, a motor for moving said stage, and a controller for driving said motor.

Claim 16. (previously presented) A laser annealing apparatus according to claim 15, wherein said controller drives said motor on the basis of an output of a detector supplied to said controller, the detector is for irradiating light onto the surface of an alignment mark formed on the insulating substrate and detecting an amount of light reflected from the surface of the alignment mark.